

Notice of Allowability

Application No.

10/023,199

Examiner

Dai A. Phuong

Applicant(s)

KAVAK ET AL.

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 04/25/2006.
2. ☒ The allowed claim(s) is/are 1-20.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


DUC NGUYEN
PRIMARY EXAMINER

DETAILED ACTION

1. This is in response to the Applicant's arguments filed on 04/25/2006 in which claims 1-20 are currently pending.

Allowable Subject Matter

2. After a further search and thorough examination of the present application and in view of the application's argument, claims 1-20 are found to be in condition of allowance.

Claims 2-10 and 12-20 are dependent on independent claims 1 and 11 respectively.

The following is an examiner's statement of reasons for allowance:

Regarding claim 1, the prior art record fails to anticipated or render obvious for use in wireless network communications system comprising a base transceiver station having an adaptive antenna array and a mobile station having a first mobile antenna and a second mobile antenna, an apparatus for improving downlink performance of said adaptive antenna array of said base transceiver station, said apparatus comprising: *a spatial signature estimator associated with said base transceiver station, said spatial signature estimator capable of obtaining a spatial signature from a signal received by said base transceiver station from said first mobile antenna and that is capable of obtaining a spatial signature from a signal received by said base transceiver station from said second mobile antenna; and correlation circuitry coupled to said spatial signature estimator, said correlation circuitry capable of using spatial signatures obtained from said first mobile antenna and from said second mobile antenna to identify a least changing spatial signature, and capable of using said least changing spatial signature to obtain a downlink beamforming weight vector*, all limitations in combination as defined by applicant.

Regarding claim 11, the prior art record fails to anticipated or render obvious for use in wireless network communications system comprising a base transceiver station having an adaptive antenna array and a mobile station having a first mobile antenna and a second mobile antenna, a method for improving downlink performance of said adaptive antenna array of said base transceiver station, said method comprising the steps of: *obtaining in a spatial signature estimator associated with said base transceiver station a spatial signature from a signal received by said base transceiver station from said first mobile antenna; obtaining in said spatial signature estimator a spatial signature from a signal received by said base transceiver station from said second mobile antenna; and using spatial signatures obtained from said first mobile antenna and from said second mobile antenna to identify a least changing spatial signature; and using said least changing spatial signature to obtain a downlink beamforming weight vector*, all limitations in combination as defined by applicant.

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submission should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nguyen M Duc can be reached on 571-272-7503. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dai Phuong

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Date: 07-05-2006